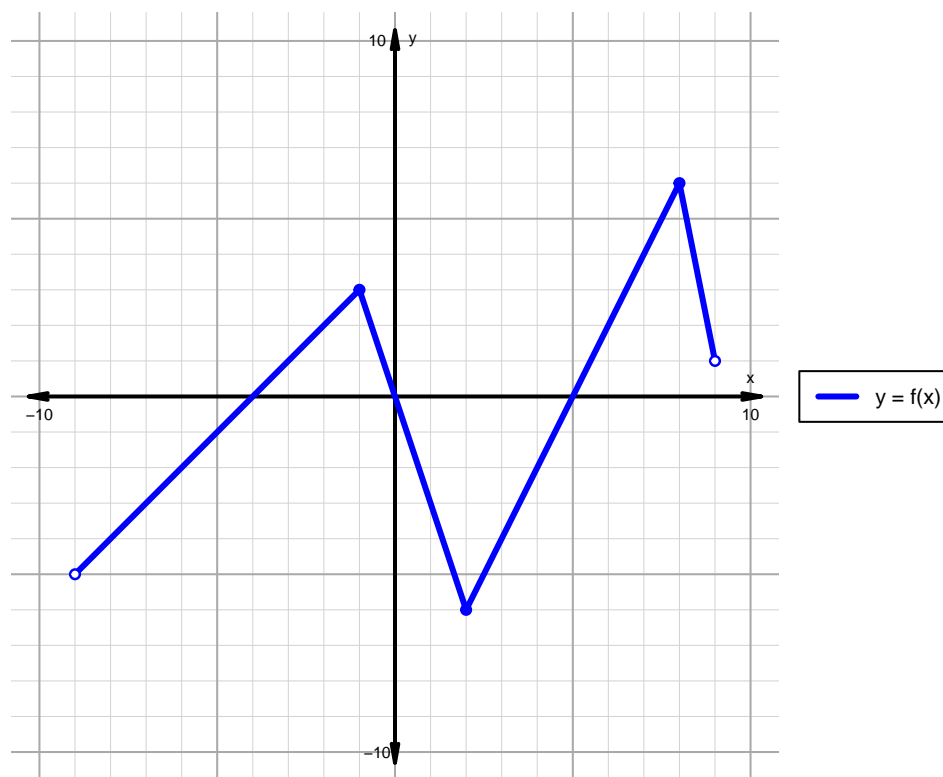


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 19)**

1. The function  $f$  is graphed below.

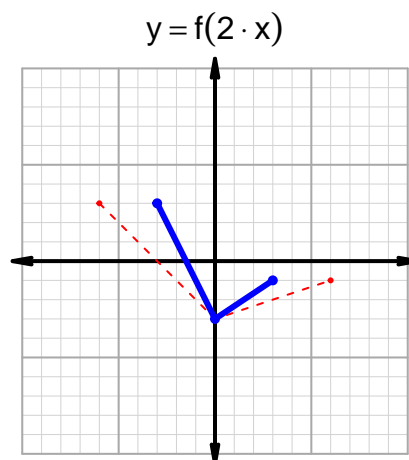
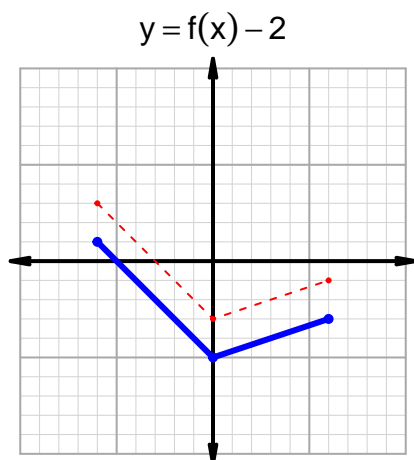
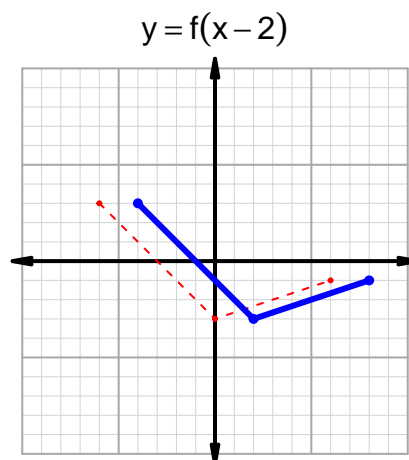
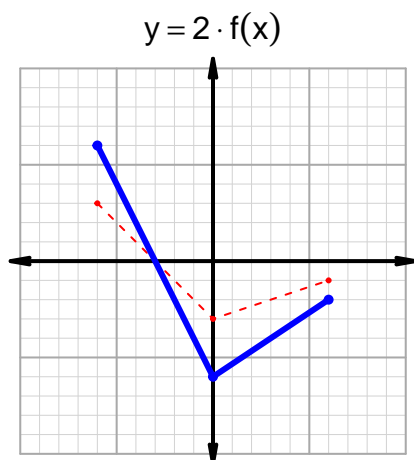


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-4, 0) \cup (5, 9)$
Negative	$(-9, -4) \cup (0, 5)$
Increasing	$(-9, -1) \cup (2, 8)$
Decreasing	$(-1, 2) \cup (8, 9)$
Domain	$(-9, 9)$
Range	$(-6, 6)$

## Intervals, Transformations, and Slope Solution (version 19)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 55$  and  $x_2 = 69$ . Express your answer as a reduced fraction.

$x$	$g(x)$
55	73
66	55
69	66
73	69

$$\frac{f(69) - f(55)}{69 - 55} = \frac{66 - 73}{69 - 55} = \frac{-7}{14}$$

The greatest common factor of -7 and 14 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-1}{2}$$